

CLAIMS

1. An exhalation valve assembly for fitting in the exhalation path of a respirator, said valve assembly comprising first and second valves spaced apart in the exhalation path such as to define between them a dead space operable to retain a portion of the exhaled air.  
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2. An exhalation valve assembly as claimed in claim 1 wherein each of said first and second valves is a one-way valve and wherein the valves are arranged such as to allow exhaled air to pass through them in series.  
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3. An exhalation valve assembly as claimed in either one of claims 1 or 2 wherein said first and second valves are spaced apart a sufficient distance that they do not interfere with one another during their normal operation.  
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4. An exhalation valve assembly as claimed in any one of the preceding claims wherein each of said first and second valves comprise flap valves.  
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5. An exhalation valve assembly as claimed in any one of the preceding claims wherein the valves are situated within a generally cylindrical housing having means whereby it may be releasably attached to a respirator.  
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6. An exhalation valve assembly as claimed in claim 5 wherein said first and second valves are mounted across the interior of the cylindrical housing and spaced from one another so that the space within the cylindrical housing which lies between said valve constitutes said dead space.  
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7. An exhalation valve assembly as claimed in either one of claims 5 or 6 wherein said housing is fabricated from separate cylindrical sections attached together, and wherein each of said valves is mounted in a respective one of said sections.

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8. An exhalation valve assembly as claimed in any one of claims 5 to 7 wherein the interior surface of the housing in the area between the first and second valves is smoothly contoured to minimise turbulence as the air passes from one valve to the other.

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9. An exhalation valve assembly as claimed in any anyone of the preceding claims wherein the downstream valve has a valve member of conical or part-conical shape.

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10. An exhalation valve assembly as claimed in any one of the preceding claims further comprising baffle means situated downstream of the downstream valve to create a second dead volume downstream of the downstream valve.